IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
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Kwang Cheol JOO et al.	)	Group Art Unit: 2623
	)	
Application No.: 09/053,650	)	
	)	
Filed: April 2, 1998	)	Examiner: Brown, Rueben M.
	)	
For: DOWNLOADING APPARATUS AND	)	
METHOD THEREOF FOR DIGITAL	)	Confirmation No.: 1592
BROADCAST RECEIVER	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT

In reply to the Office Action mailed August 27, 2007, the period for response to which extends through November 27, 2007, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims in this paper beginning on page 2.

Remarks follow the amendment section of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-26. (Canceled)

27. (Currently Amended) A downloading apparatus for a broadcast receiver, comprising:

a receiver which receives a broadcast signal having a video program signal and a control information signal;

a storage element which stores a control program, the control program controlling the operation of a video program corresponding to the video program signal, wherein the storage element further comprises

a random access memory (RAM) for temporarily storing a downloaded control program, and

a non-volatile random access memory (NVRAM), including

a first domain,

a second domain for storing a control program,

a third domain for storing a downloading program for controlling a download procedure, wherein during the download procedure the control program stored in the second domain is updated, and

a fourth domain for storing a bootstrap program, wherein the bootstrap program controls an initial boot routine,

wherein the first domain stores a version number of the control

program stored in the second domain when the control program is valid

and a predetermined number when the download procedure for updating

the control program in the second domain was suspended due to ~~a power~~

~~failure or~~ a signal transmission error, and wherein the initial boot routine

includes checking whether or not a value stored in the first domain is the

predetermined number and, when the value is the predetermined number,

automatically updating the control program by restarting the downloading

program stored in the non-volatile random access memory; and

a micro-controller for replacing the control program stored in the second domain

with the downloaded control program temporarily stored in the random access memory

based on the control information signal and the version number of the control program.

28.   (Previously Presented)   The apparatus according to claim 27, wherein

the broadcast signal includes a packet identifier (PID) to identify a type of information of

the broadcast signal.

29-31. (Canceled)

32.   (Previously Presented)   The apparatus according to claim 27, further

comprising a signal processor which separates the control information signal from the

broadcast signal.

33.   (Withdrawn) A downloading apparatus for a broadcast receiver, comprising:

a receiver for receiving a broadcast signal having a video program signal and a control information signal representing a new control program;

a first storage element for temporarily storing said control information signal representing the new control program;

a second storage element for storing a control program controlling the operation of a video program corresponding to said video program signal and a predetermined version number indicating a version of the new control program;

a controller for replacing the control program in the second storage element with the new control program based on said control information signal and said predetermined version number;

a third storage element for backing up the control program before the replacing of the control program in the second storage element with the new control program.

34.   (Withdrawn) The apparatus according to claim 33, wherein said broadcast signal includes a packet identifier (PID) to identify said new program to be downloaded.

35.   (Withdrawn) The apparatus according to claim 33, wherein at least one of the first and second storage elements includes a RAM.

36.   (Withdrawn) The apparatus according to claim 33, wherein at least one of the first and second storage elements includes a flash memory.

37.   (Withdrawn) The apparatus according claim 33, further comprising a third storage element which stores said new program.

38.   (Withdrawn) A method for downloading a control program from a broadcast signal in a broadcast receiver, comprising:

storing a control program in a first domain of a memory;

storing a predetermined value corresponding to said stored control program in a second domain of the memory;

selecting a name of a control program to be downloaded;

separating a control program corresponding to said selected control program name from a broadcast signal;

backing up said stored control program in a third domain of a memory;

replacing said stored control program with said separated control program corresponding to said program name in said first domain of the memory; and

replacing said stored predetermined value with a version number corresponding to said replaced control program in the second domain of the memory.

39.   (Withdrawn) The method according to claim 38, wherein said broadcast signal includes a packet identifier (PID) to identifiy said name of the control program to be downloaded.

40.   (Withdrawn) The method according to claim 38, wherein the memory includes a RAM.

41.   (Withdrawn) The method according to claim 38, wherein the memory includes a flash memory.

42.   (Currently Amended)   A method for downloading a control program from a broadcast signal in a digital broadcast receiver, comprising:

starting a downloading program stored in a non-volatile random access memory;

downloading a new control program from the broadcast signal, and then temporarily storing the downloaded new control program in a volatile random access memory;

writing a predetermined value in a version domain of the non-volatile random access memory;

deleting a control program stored in the non-volatile random access memory;

writing the downloaded new control program stored in the volatile random access memory in the non-volatile random access memory;

writing a version number corresponding to the downloaded new control program in the version domain of the non-volatile random access memory;

rebooting the digital broadcast receiver;

examining the version domain of the non-volatile random access memory during an initial boot routine controlled by a bootstrap program; and

restarting the downloading program stored in the non-volatile random access memory for recovering the control program when the examined version domain of the non-volatile random access memory includes the predetermined value when the downloading new control program for updating the control program was suspended due to a signal transmission error, and starting the control program stored in the non-volatile random access memory when the examined version domain of the non-volatile random access memory fails to include the predetermined value.

43-45. (Canceled)

46.   (Previously Presented) The method according to claim 42, wherein the non-volatile random access memory includes:

a version domain storing the version number and the predetermined value; and

a control program domain storing the control program.

47.   (Withdrawn) A method for downloading a control program from a broadcast signal in a broadcast receiver, comprising:

providing a name of a control program to be downloaded;

writing a predetermined valued in a first domain of a memory;

backing up a control program which is stored in a second domain of the memory in another memory;

deleting the control program which is stored in the second domain of the memory;

downloading a control program corresponding to said program name from a broadcast signal into said second domain of the memory;

replacing said predetermined value with a version number corresponding to said downloaded control program in the first domain of the memory.

48.   (Withdrawn) The method according to claim 47, further comprising processing the control program which is stored in said another memory, when said downloading is suspended due to an abnormal situation.

49.   (Withdrawn) The method according to claim 47, wherein said broadcast signal includes a packet identifier (PID) representing said control program name.

50.   (Withdrawn) The method according to claim 47, wherein at least one of the memory and said another memory includes a RAM.

51.   (Withdrawn) The method according to claim 47, wherein at least one of the memory and said another memory includes a flash memory.

52.   (Withdrawn) The method according to claim 48, wherein said processing includes recognizing said abnormal situation based on a predetermined value which is stored in the first domain of the memory.

REMARKS

In the outstanding Office Action dated August 27, 2007, the Examiner rejected

claims 27, 28, 32, 42, and 46 under 35 U.S.C. § 103(a) as being unpatentable over U.S.

Patent No. 5,666,293 to Metz et al., in view of U.S. Patent No. 6,230,319 to Britt, Jr. et

al.

By this amendment, Applicants amend claims 27 and 42. Claims 33-41 and 47-

52 remain withdrawn from consideration for examination as drawn to a non-elected

species. Therefore, claims 27, 28, 32-42 and 46-52 are pending in this application.

I.   Rejection under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of claims 27, 28, 32, 42, and 46

under 35 U.S.C. § 103(a) as being unpatentable over Metz et al. in view of Britt, Jr. et

al., because a prima facie case of obviousness has not been established. The

Examiner has the initial burden of factually supporting any prima facie conclusion of

obviousness. See M.P.E.P. § 2142, 8th Ed., Rev. 6 (Sept. 2007). To do so, the

Examiner must first establish Graham factual findings, and then make a determination

whether the claimed invention "as a whole" would have been obvious to a person of

ordinary skill in the art at the time of the invention. Id.; see also M.P.E.P. § 2141.IV.

The Graham inquiries include determining the scope and content of the prior art;

ascertaining the differences between the claimed invention and the prior art; and

resolving the level of ordinary skill in the pertinent art. See M.P.E.P. § 2142.II. The

determination of whether the claimed invention would have been obvious based on the

factual findings under Graham must be supported with articulated rationales. See

M.P.E.P. § 2142 ("The key to supporting any rejection under 35 U.S.C. § 103 is the

clear articulation of the reason(s) why the claimed invention would have been

obvious."); see also M.P.E.P. § 2143 (providing examples of rationales for supporting an obviousness rejection).

In this case, the rejection of claims 27, 28, 32, 42, and 46 under 35 U.S.C § 103(a) is improper because the Examiner has not made the factual findings with regard to the newly amended claims, and has not articulated any rationale in support of obviousness of these claims.

First, Metz et al. does not teach or suggest at least "[storing]…a predetermined number when the download procedure for updating the control program in the second domain was suspended due to a signal transmission error," as recited in claim 28. Instead Metz et al. teaches that "an application program and data files related to the program are temporarily stored in a VRAM (volatile random access memory) during an OS downloading operation." Britt, Jr. et al. fails to cure such deficiency of Metz et al. Britt, Jr. et al. teaches only storing a NO PWR FLAG when there is a power outage, but does not teach or suggest "[storing] … a predetermined number when the download procedure for updating the control program in the second domain was suspended due to a signal transmission error." Therefore Metz et al. and Britt, Jr. et al., taken alone or in combination, fail to teach or suggest at least "[storing]…a predetermined number when the download procedure for updating the control program in the second domain was suspended due to a signal transmission error."

Moreover, Metz et al. does not teach or suggest "when the value is the predetermined number, automatically updating the control program by restarting the downloading program stored in the non-volatile random access memory." Metz et al. does not teach or disclose the concept of the present application as to automatically

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updating the control programs by the updating program pre-stored in the flash memory based on the version number and a predetermined number in the initial boot routine. Metz et al., as shown in Figure 9 of the reference, performs a checksum procedure twice, once at the step of S6 to examiner whether there is an error in received data, and another at the step of S9 to examine whether there is an error in an operating system loaded to a flash memory. The present application works differently as it uses a micro-controller to replace a "control program stored in the second domain with the downloaded control program temporarily stored in the random access memory based on said control information signal and the version number of the control program." Metz et al. does not compare version information on a control program to a predetermined value in order to determine whether an error has occurred during a downloading operation. Britt, Jr. et al. does not cure this deficiency. Britt, Jr. et al. teaches only storing a NO PWR FLAG when there is a power outage, but does not teach or suggest "when the value is the predetermined number, automatically updating the control program by restarting the downloading program stored in the non-volatile random access memory." Therefore, Metz et al. and Britt, Jr. et al., taken alone or in combination, fail to teach or suggest at least "when the value is the predetermined number, automatically updating the control program by restarting the downloading program stored in the non-volatile random access memory."

For at least these reasons, Metz et al. and Britt, Jr. et al. alone or in combination fail to teach or suggest each and every element of claim 27. The Examiner has not articulated any rationale for why such deficiencies are obvious. Therefore, the rejection of claim 27 and its dependent claims 28 and 32 is improper and should be withdrawn.

Independent claim 42, as amended, recites, <u>inter alia</u>, "downloading a new control program from the broadcast signal, and then temporarily storing the downloaded new control program in a volatile random access memory; writing a predetermined value in a version domain of the non-volatile random access memory; deleting a control program stored in the non-volatile random access memory; writing the downloaded new control program stored in the volatile random access memory in the non-volatile random access memory; writing a version number corresponding to the downloaded new control program in the version domain of the non-volatile random access memory."

For reasons similar to those set forth in the above, <u>Metz et al.</u> and <u>Britt, Jr. et al.</u> fail to teach or suggest at least these elements of claim 42. Therefore, claim 42 is allowable over <u>Metz et al.</u> and <u>Britt, Jr. et al.</u> Claim 46 depends from claim 42 and is therefore also allowable over <u>Metz et al.</u> and <u>Britt, Jr. et al.</u> at least for the same reasons as claim 42.

In view of the foregoing remarks, Applicants request reconsideration of the application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: November 27, 2007   By:_____
                                            Qingyu Yin
                                            Reg. No. 61,329